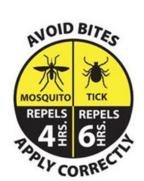
Office of Public Health and Wildlife Health Branch



Insect repellents are one of the most effective ways to prevent mosquito— or tick—borne diseases.

The table below lists the CDC recommended and EPA-approved repellents that work against both ticks and mosquitoes. Be sure and read the label of any product you select for instructions on its usage. Look for the EPA label shown to the right for guidance on appropriate use and duration of effectiveness. The label will tell you if the product is effective against ticks and/or mosquitoes, and how long the product should be effective for each species. If a product does not have the label to the right, it has not been tested for efficacy for public health purposes. If a repellent stops becoming effective, you can reapply the product, choose a different product, or leave the area. All repellents should be washed from the skin before sleeping for the night.



Repellent	Source	Concentration	Contraindications
DEET (N, N-	Synthetic	30%*	Do not use on infants under 2 months
diethyl-m-	compound		old. Do not use concentrations over
toluamide)*			30% on children.
IR3535 (3-[N-	Synthesized	20%	
butyl-N-acetyl]-	plant oil		
aminopropionic			
acid)			
Picaridin (KBR	Synthetic	5-10% for \leq 2	
3023)	compound	hours; 20% for	
		8-14 hours	
Oil of Lemon	Synthesized	10% for ≤2	Do not use on children under 3 years
Eucalyptus [p-	plant oil	hours; 30-40%	old.
menthane 3, 8-		for longer	
diol (PMD)]		-	
Permethrin	Synthetic	0.5%	Not effective on skin; intended for use
	compound		on clothing, shoes, bed nets, etc. only.

^{*} DEET concentrations above 30% do not significantly increase the level of protection, but will last longer and may increase the risk of adverse side effects.

For more information: www.cdc.gov/; http://www.epa.gov/insect-repellents

NPS Office of Public Health (202) 513-7225

NPS Integrated Pest Management Program (970) 225-3559